A
METHOD
OF
TANNING
WITHOUT
BARK.

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[illegible] 'Maple'

TO

HIS EXCELLENCY

William Conolly, Eſq;

SPEAKER

OF THE

Houſe of Commons of *Ireland*.

And to the Reſt of the

Members of That HOUSE.

THIS

METHOD

OF

TANNING without BARK

Is humbly inſcribed

By Their moſt

Obedient Servant,

William Maple.

BRITISH MUSEUM
30 DEC 60

THE Method of Tanning WITHOUT BARK.

IN Political Computations, the following Principles are univerſally allowed.

THAT the Riches of every Country ariſe from the Natural Produce of the Earth; and the Labour and Art, imployed in improving the ſame.

THAT the Quantity of Native Commodities, the Source of Riches, is in Proportion to the Number of People, fully and uſefully employed.

THAT every induſtrious Perſon adds to the Wealth, and Support of a Nation; and every Idler, detracts from both, by living on the Labour of Others.

That it is the beſt Policy in any Government, to encourage, and provide for the full Employment of the People; ſince thereby, the Number, Wealth, Strength, and Quiet of the Inhabitants are increaſed.

That the Gain, or Loſs of any Nation by Trade, is known, and determined by the Proportion, which the Exports bear in Value to the Imports. On this depends the abſolute Quantity of Money in a Nation; the Relative Quantity of the ſeveral Species, that compoſeth this Money, being aſcertained by the Value impoſed on thoſe Species, either as it agrees with, or differs from the Value ſet thereon by other Nations.

A Nation certainly loſes by a Trade, whoſe Exports are not compleatly manufactured, and whoſe Imports are fully wrought.

A few Manufactures will ſerve to exchange for great Quantities of the ſimple Produce of the Earth. The Value of Manufactures, being principally owing to Labour and Art.

If upon theſe Principles, we examine the State of the Trade of *Ireland*; I fear we ſhall find it, in a very declining, and ruinous Condition.

Our

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Our Exportations are made up of Wool, Woorſted, Linnen, Yarn, Beef, Butter, Cheeſe, Tallow, Hydes, Skins, and a few other Articles.

We are not allowed to export our Wool and Woorſted, but to a few Ports in *England*, and are prohibited from ſending thither, or any where elſe, any other of our Woollen Manufacture. Linnen, and ſome tanned Hides are the only Commodities we export, compleatly Manufactured; Yarn and Woorſted may be accounted but as half-wrought; Almoſt all the other Articles are but little removed from the State, Nature has given them to us, and have little or no Labour or Art employed about them.

At the ſame Time, we export ſo liberally the Growth of our Country, and ſo little of our Manufactures, we may obſerve all our Importations are of ſuch Commodities, as are not capable of farther Improvement; ſuch as *Eaſt-Indian* and *Weſt-Indian* Goods, Druggs, Wines, Spirits, Manufactures of Wool, Silk, Linnen, Iron, Braſs, Glaſs, *&c.* Nay, the common Produce of almoſt all Countries, as Corn, Timber, and

Fireing, are imported in great Quantities to ſupply our Neceſſities.

By this Management of our Trade, we maintain many Thouſands in foreign Countries, and drive Numbers of our own People from us, or leave them to ſtarve at home, for Want of Employment.

If to this View, we add that mighty Drain of our Bullion, made by thoſe Gentlemen, who, having great Eſtates in this Kingdom, chooſe to ſpend them any where, rather than at home: We can not be at a Loſs, how to account for the Ballance of Trade, running againſt us, for ſo many Years paſt.

The moſt certain Way left to retrieve our Affairs, is to leſſen our Imports, and to encreaſe our Exports, eſpecially of Manufactures.

The Commiſſioners of the Linnen Manufacture, by an unwearied Application and uncommon Skill, have contributed greatly to the Value of our Exports, by the Advancement of the Linnen Manufactury. And I don't doubt but that in ſeveral other Articles, divers Expedients and Means, may be thought of, for promoting a greater Conſumption of our Own, and leſſening that of foreign Commodities; and as one Inſtance, I ſhall beg Leave to propoſe an Improvement in our Tannage, by which I apprehend, we ſhall be enabled to Tan with the Produce of our own Country all the Hydes that now are Exported Raw, and thereby increaſe the Value of our Exports, employ many Thouſands of our People, and avoid the Neceſſity of Importing Bark.

To ſet this Matter in a clear Light, I ſhall lay down, in the firſt Place, the Export of Green Hydes, and the Import of Bark, in the ſeven following Years, for the Whole Kingdom, as the ſame has been extracted out of the Cuſtom-Houſe Books.

Years.	*Gr. Hydes.*	*Bark B's.*
1721	46,847	46,556
1722	86,004	45,794½
1723	123,514	47,824½
1724	103,477	60,740½
1725	69,858	48,407
1726	60,441	45,279
1727	57,373	50,588

In the next Place it is to be obſerv'd,

That Bark, according to its Goodneſs, is ſold from 6 to 10, and in ſome Years, 11 Shillings, the Barrel.

That Cow-Hydes weigh from 56, to 84 Pounds each; Bullock Hydes, weigh from 84 to 140 Pounds each, and both are ſold from 15 to 21 Shillings, the hundred Weight.

That Soles, are generally ſold from 8 to 8 Pence half-penny the Pound.

That Hydes generally loſe about half their Weight, in Tanning.

From theſe Principles, when thrown into mean Proportionate Quantities, it is evident:

That the Quantity of Bark, annually imported, is 50,000 Barrels, and the Value 21,000 Pounds.

That the Number of Green Hydes, annually exported, are 80,000. and their Value 57,000 Pounds.

That if theſe Green Hydes were tanned before Exportation, their Value would be 123,000 Pounds.

THAT the Difference, ariſing from the Different State of theſe Hydes, on Exportation, is 66,000 Pounds, which Sum added to the 21,000 Pounds, the Value of the imported Bark, making in the whole 87,000 Pounds, muſt be accounted, as ſo much gained to the Kingdom, ſhould our Tannage be effected by our own Produce and Labour.

THE Nations, that demand this Export of thoſe Green Hydes, are thoſe, whoſe black Cattle are not bred, in ſuch Numbers, as to ſupply their indiſpenſable Demands; Nor will their dry Hydes, which they receive from their Settlements abroad, admit a thorough Tannage; They, in hopes of putting their Neighbours, who have a Redundancy of Hydes, under a Neceſſity, of parting with them unmanufactured, have prohibited, by the ſevereſt Penalties, the ſending us any Bark. While we, on the other Part, have not only complied with this detrimental Export; but alſo have been ſo regardleſs of our own Intereſt, as to permit ſeveral Tanners, ſome from this City, to go, and inſtruct them in an Art, they almoſt were Strangers to.

THE *Engliſh*, from a true Senſe of the Diſadvantage of ſuch a Trade, have ſubjected the Exporter of a Green Hyde, to the Penalties of 500 Pounds, and a Diſability to trade in Leather, ever after. *Ann.* 14. *Car.* II.

SUCH an Act, even in our preſent Circumſtances, may, by ſome, be thought adviſeable for us; Becauſe, ſuch Nations, as now gladly receive our Green Hydes, finding a Stop, put to their uſual Supplies, would be under a Neceſſity of receiving our tanned Hydes, and ſelling us their Bark. Leather being a Commodity, that does not depend on the Fancy; but, is abſolutely requiſite, not only to the Luxuries, but alſo, to the Neceſſities of Mankind.

AT preſent, Our Tanners find a great Scarcity of Bark, except thoſe reſiding in ſome conſiderable Sea-Port-Town, and are under juſt Apprehenſions of a greater. Several in the Country have been obliged to lay aſide their Pits, and take to other Imployments; the uſual Supplies failing. Our Neighbours who will permit any Bark, to be ſent us, are in a Manner exhauſted. Our

American Plantations are too remote to find their Account, in ſending any great Quantity. The Produce of our Country is ſcarce a twentieth Part of what is uſed in Tanning. This renders our Tannage dear, and often imperfect, ſo as not to ſerve a foreign Market, to Advantage, and Reputation.

BUT if we had Materials, of our own Growth, eaſy of Acquiſition, and Propagation, that would tan, in every Reſpect, as well as Bark; were theſe Materials, as to their Powers, well aſcertain'd, and confirm'd by a general Experience, the making an Act, to prohibit the Exportation of Green Hydes, would be judged by all to be Adviſeable, and Uſeful to the Kingdom.

WHEN the apparent Qualities of Bark, are conſidered; and that by it's inſinuating into the Pores, and incorporating with the Subſtance of the Hyde, it produces a Firmneſs, Strength, and Conſolidation of the Parts; It is very ſurprizing, that other Materials, of the ſame Apparent Qualities, have ſo long remained neglected, and unapplied to the ſame Uſes; when the Conſequence is of ſuch Moment.

Tormentil, and *Cinquefoil* Roots, are ranged in the ſame Medical Claſs; have the ſame apparent Qualities, eſpecially the firſt, in a more eminent, and evident Degree, than Bark, it ſelf.

On Tryal, they have anſwered beyond Expectation: The *Cinquefoil* did not give ſo good a Colour, as the *Tormentil*, which in all Reſpects, as to Colour, Bloom, Subſtance, Solidity, and Weight, in the Tanned Hyde, compleatly anſwered, and in much leſs Time, than when Bark, (even of the beſt Kind, or Growth) is uſed.

Tho', what is here aſſerted, is grounded on ſeveral Years Experience, and confirmed by the Opinion and Teſtimony of Mr. *Philip Cooley*, Tanner, who from the Beginning hath been concerned in the ſeveral Tryals, and to whoſe Skill and Induſtry a Part of the Subſequent is owing. Yet to give the utmoſt Satisfaction, and as I think my ſelf in the ſtrongeſt Manner bound by the Encouragement, hitherto given me, by the *Houſe of Commons*, to render the beſt Information I am able, in an Affair of ſome Conſequence to the Public, I ſhall

I ſhall give a moſt faithful Account of the Progreſs that has been made, and the Succeſs that hath attended this Way of Tanning with relation to the Goodneſs of the Leather, the Time, and Charge of Tanning, and other Circumſtances; and ſhall add ſeveral Obſervations, with Directions for finding, and propagating theſe Roots, in great Plenty, that all Perſons may be encouraged to carry this Method of Tanning, into a general Practice, which as it will be for their private Advantage, ſo it will not fail to promote the Public Benefit.

In Order to this, I ſhall in the firſt Place beg Leave to place this Affair in the Light it appeared in before the *Committee* of the *Houſe of Commons* of *Ireland*, to whom my Petition was referred by the *Houſe*, in which Petition it was alledged, that I had eſtabliſhed a Method of Tanning, without the Uſe of any Barks, to as great Perfection, cheaper, and in leſs Time, than with Bark, by Vegetables of our Natural Produce, and of eaſy Culture.

The *Committee*, were pleaſed, for their greater Satisfaction, to ſummon a Great

Number of Tanners, Curriers, Shoemakers, and others, to attend, to give their Teſtimony in relation to the ſeveral Specimens, and Proofs, that were to be laid before them.

In reſpect to the Goodneſs of the Leather, ſo tanned, the following Specimens were exhibited.

N°. 1. A Calve's Skin from the Ooze.

N°. 2. A Calve's Skin, uncurryed.

N°. 3. A Calve's Skin, curried: each of theſe, when tann'd and dry'd, weighing about three Pounds.

N°. 4. A Calve's Skin, very ſtrong and large, when tanned and dryed, weighing about Six Pounds.

N°. 5. Seven or Eight Pair of Soles, of a Calve's Skin, rais'd.

N°. 6. A Bend of a Bullock's Hyde for Harneſs.

These were all proved by *Thomas Cooley* and *Patrick Shale* to be tanned without Bark, and with the Roots.

Mr. *Henderſon*, Maſter of the Tanners, ſaid he was diffident of the Goodneſs of the Specimens, that he ſhould have been thoroughly ſatisfyed; had he known, how the Leathers had proved, if worn, by ſome Porters, or Chairmen. That the Colour of Number 2, or 3, was not ſo good as ſome tanned with Bark, producing a Calve's Skin curried, to compare with them, but did own, all the Specimens were thoroughly ſtruck, and well tanned: That if they were in a Shop, intermixt with Skins, tanned by Bark, he could not diſtinguiſh them; and that, what tanned Numb. 5 and 6, would tann, Time and Quantity allowed, the thickeſt Bullock's Hyde.

Mr. *Dobſon*, Tanner, affirmed the Specimens were not well tanned, becauſe they did not come up to the Colour of the Skin produced by Mr. *Henderſon*, but in other Reſpects, the Leathers appeared, to be as good in their reſpective Kinds, as any tanned with Bark.

Mr. *Nicholas Gibton*, Maſter of the Curriers, affirmed that the Skin produced by Mr. *Henderſon*, was of an Extroardinary Colour; That there were not ten ſuch in *Dublin*; That the Difference in Colour was but very ſmall, and in regard even to Colour, would chooſe thoſe tanned by the Vegetables, as ſoon as Mr. *Henderſon*'s Skin; That all the Specimens appeared to be very well tanned, and that he could in no wiſe diſtinguiſh them from Bark-Tannage.

Mr. *Devereux*, Currier, being ſent out, returned, producing two Calves Skins tanned by Bark, which he took indifferently, and without chooſing, from the next Currier's Shop. They were allowed by all, to be of a general or common Colour; and being compared were much exceeded by the Specimens, and particularly, as to Colour.

Mr. *Edmund Sheild*, Currier, ſaid he never ſaw better tanned Leather, than the Specimens, that their Colour was very good and, that what tanned Numb. 5. would tann any Hyde, whatſoever.

Mr. *Brookfield*, Tanner, reported the Specimens exhibited, were well tanned and thoroughly ſtruck; that neither He, or any other could diſtinguiſh them, from Bark Tannage; and that what tanned Numb. 5, could not fail in any Tannage.

Mr. *Veckers*, Tanner, allowed the Specimens to be very well tanned; and gave it, as his Opinion, that what tanned Numb. 5 and *6*, would tann the thickeſt Sole Leather.

Mr. *John Gades*, Shoemaker, after giving his Teſtimony, that all the Specimens appeared to be exceedingly well tanned, produced a Shoe, made by him, of the Leather of this Tannage, affirming the Leather, wrought very well, and that the Soles exhibited, under the Hammer, all the Signs of extraordinary Leather.

Mr. *Ellis*, Shoemaker, reported the Specimens were very well tanned: That, Leather either dead, or highly tanned, would never carry ſo beautiful a Colour as Leather otherwiſe tanned. That, the Sole Leather appeared to be very well tanned; and that in his Opinion this Tannage, would in every reſpect, anſwer the ſame End, or Intentions, as Bark Tannage.

Mr. *James King*, Shoemaker, ſaid all the Specimens, were effectually tanned.

Mr. *Richard Norris*, Shoemaker, produced a Sole of this Tannage, beaten; aſſerting

ſerting he never ſaw ſo good a Sole of rais'd Calve's Skin, that it beat firm, ſolid, and without ſpreading, or Fuzzineſs: which are the diſtinguiſhing Characters of good Sole Leather, he deſired it might be cut in ſeveral Places, that the Cloſeneſs, and Firmneſs might be view'd, which accordingly was done, and anſwering Expectation was approved.

THERE were a great many other Tanners, Curriers, and Shoemakers, who were of the ſame Opinion. But conſidering, their Teſtimonies, would be but ſo many Repititions; I ſhall not recite them.

DR. *Richard Helſham*, Profeſſor of Natural Philoſophy in *Trinity College*, ſaid I had communicated to him, what was uſed in this Tannage, which appeared to be well adapted to tanning, and would not fail to give a ſufficient Strength, and Rigidity to the Fibres. Adding he wore a pair of Shoes, the Upper Leathers of this Tannage, daily for four Months, and being willing to try the utmoſt of the Leather, had new Soles put to them; that ſince he had worn them about a Month: ſhowing them, without any Cracks, or Defect.

Patrick Carrol, produced two Slips of curried Calf Skin; the one tanned by Bark, the other by the Roots, each three tenths of an Inch broad, and ten Inches long, the firſt was the thickeſt, and weighed, a tenth Part more than the other. He ſaid, he was preſent with ſeveral others, when it broke, by a Weight of 129 Pounds being hung to it; That the Slip of this new Tannage, being tryed with the ſame Circumſtances, bore 29 Pounds more than the 129 Pounds, before it either yielded, or broke.

In reſpect to Time.

That the Specimens, N°. 1, 2 and 3 were tanned in five Weeks, N°. 4 in nine Weeks, N°. 5 in four Months, without any Hurry, extraordinary, or illegal Methods: was proved by Mr. *Thomas Cooley*, and *Patrick Shale*; on the other Side, it appeared, that in tanning with Bark, from three to five Months were required for Calves Skins, from ſeven to nine were requiſite for Soles of rais'd Calves Skins, and from ten to thirteen Months for Bullocks

Hydes, which by this Tannage, may be effected in nine or ten.

In regard to Cheapneſs.

Mr. *Philip Cooley*, affirmed that ſix Pounds of the Dry Roots, added to ſome old expended Ooze, tanned Six Calves Skins, three of which were produced under the N°. 1, 2, and 3; and that he believed ſixteen Pounds would have done as much from the firſt, or without any old Ooze.

In relation to the Cheapneſs.

Part of the Roots, I have uſed, I purchaſed at three Farthings, the Pound; but of late Years, and being willing to engage the Privacy of the Gatherer; I have given a Penny; they loſe about a third in Drying: Allowing theſe as Facts and taking it at the deareſt, leſs than five Shillings worth of Roots, will go farther, than a Barrel of the beſt Bark.

As to their Plenty and Propagation, Dr. *Helſham* teſtified, they grew in great Plenty as he had obſerved, in ſeveral Counties of this Kingdom, and were very eaſily propagated.

Dr. *William Stephens*, Botanic Profeſſor in *Trinity College*, *Dublin*, in his Examination declared, that they grew in great Plenty about *Dublin*, and in ſeveral Counties he had obſerved great Quantities, chiefly on Mountains, and barren Places: That, they were eaſily to be propagated, in almoſt any kind of Soil, and that he had ſome flouriſhing in the Phyſick Garden, belonging to the Univerſity.

The Reſolutions, that the Houſe entred into *January* 10, might very well have ſufficed to have recommended a General Practice. But to remove ſome Prejudices and to obviate ſome falſe Repreſentations, I have impartially recited the ſeveral Facts and Teſtimonies, on which they were founded.

That all People may eaſily know and find out theſe Plants, I ſhall here give a Deſcription; which though tedious, I hope will be excuſed.

Cinquefoil, in *Latin*, *Pentaphyllum vulgare*, in *Iriſh*, **Tuigheag** (*Tuigheag*) **Tuigvear Muirre** (*Tuigvear Muirre*) and in ſome Counties, **Meagigh**, (*Meagigh*) is a Plant, whoſe Roots are very long, about a Finger's Thickneſs, of a dark brown or reddiſh Colour, and very aſtringent in Taſte; the Leaves are born at the Extremity of a ſmall Stem, five together, deeply indented on their Edges, of an oblong Form and hairy; on the Grand Stem, at the Nodes, ſhoot forth ſeveral ſmaller, terminating with a ſmall Yellow Flower, compoſed of ſix ſmall Leaves ſurrounding a Number of Threads, from whence ariſeth a Cluſter of Seeds.

It flouriſhes in every Hedge, ſandy, looſe and deep Soil: the Roots which are to be preferred, are the thick, long, and of the darkeſt Colour.

Tormentil, or *Septfoil*, in *Weſt Meath*, called **Neauhnadis** (*Neauhnadis*) in *Ulſter*, **Menedin** (*Menedin*) or **Neauhnid** (*Neauhnid*) in *Connaught*, **Levenet** (*Levenet*) in the County of *Mayo*, **Fenede na Muc** (*Fenede na Muc*) this Plant, hath a thick, luberous Root, of a reddiſh brown Colour, ſometimes covered with a black Skin, of a very aſtringent Taſte, and ſhooting out many Fibres; the Leaves are generally ſeven,

ven, ſet on the Extremity of a Foot Stalk, of a dark Green Colour, deeply indented on the Edges and hairy, from amidſt them ariſeth ſeveral ſmall weak Stalks, of a reddiſh Colour, and hairy, about 12 or 18 Inches in Height, knotted; at every Knot, or Joint, is a Foliage, and two or three Foot Stalks, ſome bearing Leaves, and one longer than the reſt the Flowers conſiſting of four Leaves, of a light Yellow Colour, to which ſucceeds the Seeds; the flower Cup, hath Eight Leaves, four large and four ſmall, the Root when Vigorous ſends forth ſeveral Runners, the Stalks of which are of a reddiſh Colour, and hairy that ſpread over the Ground; at every Joynt, from one Part ariſeth two or three Stems, each bearing at the Extremity five Leaves, from the other Part, deſcend ſeveral Fibres that become Roots.

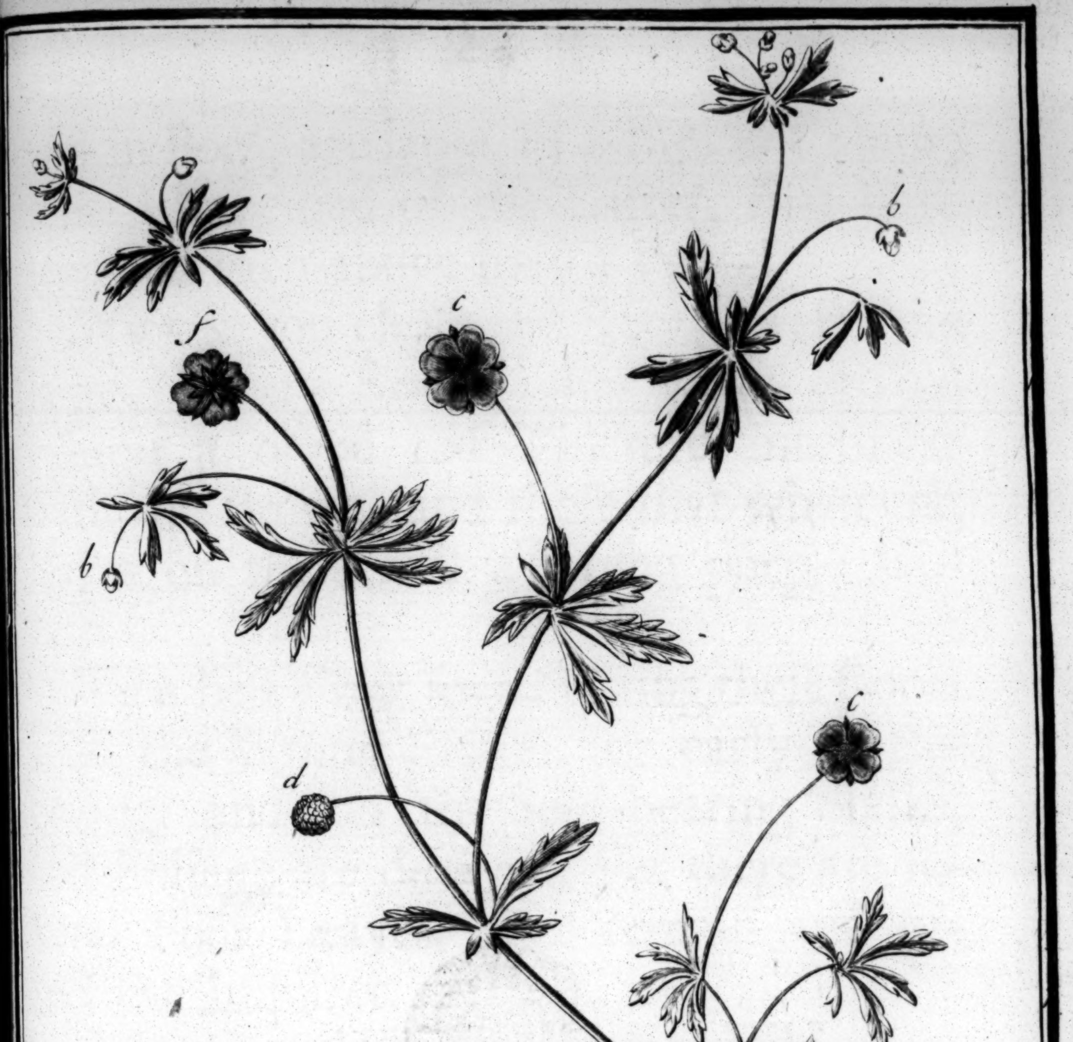
It grows almoſt every where, but chiefly delights in mountainy, barren and ſhallow Soils; the Roots ſeldom ſtriking four or five Inches deep. It hath been obſerved by Dr. *Stephens*, to grow all along the Banks of the *Doder*, from *Donore-Brook* to

Old Baun, upon Roch Town Hills; it grows on the Borders of a great Bog for ſeveral Miles, by *Rathmullian* in the County of *Meath*. In the County of *Wicklow*, Thouſands of Cart-Loads might be with Eaſe collected; Nor do I know a Mountain or Bog without Plenty of it.

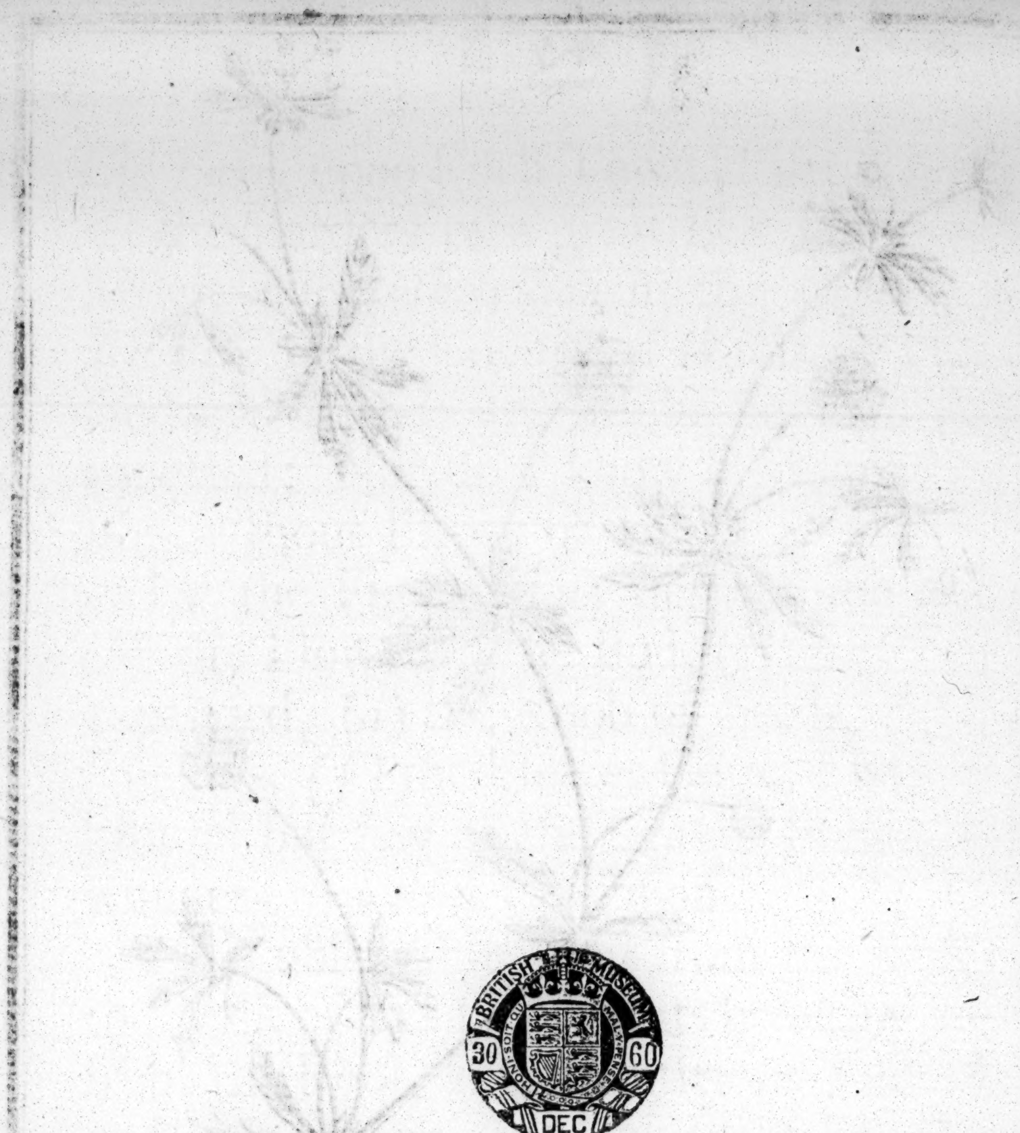
In the Figure, (*a*) denotes the Root, (*b*) the Flower in the Bud, (*c*) the Flower expanded, (*d*) the Knob of Seeds, (*e*) the Runners, (*f*) the Flower Cup. I have exhibited but few of the Leaves, Stems, and Runners to avoid Confuſion.

It is obſervable, that from the Bark of the Stalk of this Plant, at its breaking forth from the Root, excrementitious Tubercles or Knots, reſembling Oak-Galls have been often diſcovered, and like them are ſubſervient to the Propagation of Inſects; which, conſidering the extream nice, and diſtinguiſhing Taſte of thoſe Animalculas, may well be allowed as a Proof, that their Juices are ſimilar.

The Roots growing on Mountains are ſmall, ſtrong, and often have a black Coat; thoſe that grow on the Sides of Loughs,



J. Gwim Sculp.



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and in Bogs, are large, of a lighter Colour; ſome I have had of the Latter, that have weighed each above half a Pound.

WHEN you choſe the Roots, prefer the large, knotty Roots, that when broken exhibit a blood red Tincture intermixt with the Brown, and thoſe that when cut, leaves on the Knife a ſtrong purple Colour.

THE beſt Time for collecting theſe Roots is in the Winter Seaſon, or early in the Spring, and tho' the Seed-bearing Stalks, and Foliage are decayed, yet there are ſeveral Foot Leaves, that remain and direct the Inquirer.

AND tho' theſe Plants grow wild all over the Country, in ſuch Plenty, as to be more than ſufficient to tann all the Hydes, and Skins of the Kingdom; and little Apprehenſion of a Deficiency, for in digging up the Roots, there will be left ſome broken Parts, ſome Fibres, which will Vegetate and give a Supply. A common Root, on a moderate Computation will produce 8 or 10 hundred Seeds, theſe ſhedding, and diſperſed by Winds, and other Accidents, ſome will take Root, and carry on a Succeſſion.

And in regard, it may be objected, that the Trouble and Expence, in gathering them, when in ſo diſpers'd a Manner, would be very great; and a conſtant Supply uncertain: And becauſe the Roots, if raiſed in ſuch Soils, as ſhall be found to agree with them, would thereby become larger, ſtronger, as well as cheaper, I have endeavoured the Culture, eſpecially of the *Tormentil*, and with ſuch Succeſs, as to have from each ſquare Yard three Pounds weight of the Roots.

An Acre contains 7,840 ſquare Yards; but, for Paths, Waſtes, and incloſing, I would allow 1,800 Yards, not to be employed; As the firſt Year they will be little more than fibrous, I would allow three Years for their Growth, tho', if another Year was added, the Crop by an Increaſe would ſufficiently reward, not only as to Quantity but Quality; as the beſt of Lands are not required; I would ſtate the Expence of that Culture as follows,

Three Years Rent at 5 *s.* the Acre,	0	15	0
Plowing twice and Harrowing,	0	12	6
Planting,	0	7	6
Houghing,	1		
Digging up the Roots,	1		
Total	3	15	0

Suppoſe each ſquare Yard, ſhould produce but the Moiety of what before was mentioned, and ſold but at three farthings the Pound, the Amount will be 27 *l.* 3 *s.* 6 *d.* from whence a Profit ariſeth beyond moſt of our Cultures, now in general Uſe, and the Tannage may be accompliſhed, at about a Moiety of the preſent Expence.

Probably, this Eſtimate of the Charge and Profit, may not be ſo exact as to be ſtrenuouſly defended; but if defective, there is Room enough for any reaſonable Addition or Deduction, without much Prejudice to the Argument; different Soils, often one and the ſame will be attended with different Charges; The finer, the Earth is made, or the more it is broken, before Planting the better Vegetation ſucceeds; at firſt ſhooting up of the Herbage, particularly where the Ground is foul, houghing, or pulling up the large Weeds, will be neceſſary, that the Growth of the *Tormentil* may not be chequed; in a little Time it will clear its ſelf. As the Roots run ſuperficially, not ſtreeking at moſt 5 or 6 Inches in perpendicular Depth, the Charge of digging them up cannot be ſo much, as that which attends Potatoes.

THE Propagation may be effected by planting the Crowns of the Roots, (that Part, from whence the Herbage ariſeth) in either Autumn or Spring, in the ſame manner as Horſe Raddiſh, ſplitting the Crown, to leave a Bud as ſo on every Slice, then ſetting them in the Ground, about an Inch in Depth and allowing each Set, 5 or 6 Inches ſquare of Ground. When you take up a Plantation, you will have an Abundance of ſmall Roots that aroſe from the ſhedding of the Seed, and from the Runners, that will ſcarce be worth the Drying, but very proper for Planting: If you cut from either Extremity of the Root, a Piece of about half an Inch in Length, it will grow very well. The whole Root, if cut into ſuch Pieces, may be planted. In all theſe I believe the Charge of Planting might be ſaved; if you ſcatter them before Harrow, the paſſing of that over them, will cover them with Earth ſufficient; or at leaſt, the moſt Part of them.

You may Plant the Runners, as you do Strawberries, in the mention'd Seaſons and Diſtances, and conſidering the Numbers of fibrous Roots, already ſhot forth, it may be allowed the ſpeedieſt Method.

The Seeds ripen about *Auguſt* or *September*, when ripe, they are of browniſh Colour; as they are very apt to ſhed, the Time of ripening muſt be heedfully regarded; It would be adviſeable, to cut the Hawm or Herbage, a little time before the Seeds ripen, laying it on a Cloth, or winnowing Sheet in the Sun, when dry, rub the Seeds out with your Hands, and ſeparate them from the Chaff. In *March* the Ground being prepared, you may ſow and harrow, or rake them into the Ground.

The Cutting of the young Stems, if planted in *May*, will grow.

The Roots when collected, are to be waſhed very clean, from the Earth that will remain with them, for otherwiſe, that Dirt when in the Layers, ſettleth into the Pores of the Hyde or Skin, and cauſeth Numbers of Spots, and Diſcolourations.

In fair Weather, it not being a ſucculent Root, they will ſufficiently dry if ſpread on a Floor, or a clean Part of the Field; a little Wet, will in no caſe damage them. In caſe of very wet Weather, and continued, they may be Kiln dryed, in the ſame Manner as Bark.

When dryed, they muſt be bruiſed or ground, either more or leſs, according to the Uſes deſign'd, or to the Proportion you require them to ſpend in. In caſe they ſhould not be ſufficiently waſht, when they are pounded, or ground a little, it would be adviſeable to ſift the Dirt, or Earth, which by this Means is broken, and ſeperated from them.

When thus prepared, you muſt proceed in the ſame Manner, and lay away, intirely, with the ſame Circumſtances as with Bark.

It hath often been objected, That if this Method ſhould obtain, Planting would be diſcouraged, and ſo prejudice the landed Intereſt. That it is uſed in the *Canary Iſlands* and that though it may be done effectually there, yet the Produce of our Country might have Qualities very different, or not exalted to ſuch a Degree, as to be of a requiſite Force.

To theſe, I would anſwer.

That Bark would always bear a Price, in Proportion to the Rate of what is ſubſtituted in lieu thereof; It would be far from being rendered uſeleſs, but only ſuffer a Diminution in Value.

That Diminution would be more than ballanced by the accelerated Growth, and Worth of the Timber. At preſent we fall our Woods ſo young, and at ſuch improper Seaſons, on Account of the Bark, that the Timber is neither ſo good, and little more than fit for Ribberies, and Cabbins; whereas otherwiſe, was the preſent Inducement, the great Price of Bark diminiſhed, we ſhould have full, and well grown Timber, cut at a due Seaſon, and proper for Edifices, and Shipping.

The Improvement of thoſe Lands that now are unprofitable, or not far from ſuch, would be another Ballance, if not wholly, yet in Part, to the apprehended Injury.

The Uſe of this Root hath not been confined to the *Canaries*. The Reverend Mr. *Lucas Jacobſon Debes*, in his Hiſtory of the Iſlands of *Feroe* ſays Page 120, "Here
" groweth a huge Quantity of *Tormentil*,
" which the Inhabitants, having no Bark
" of Trees to tan their Hydes with, make
" Uſe of; God and Nature having reveal-
" ed to them the Dryneſs of that Herb,
" ſo that they tan their Skins with it, and
" therefore call it Bark. And Page 271.
" The Men wear Shoes of Neats Leather,
" tanned with the Roots of *Tormentil*.

The firſt of theſe Iſlands, is in the Latitude of 28, the other in 62. Yet we find the ſame Roots uſed for the ſame Purpoſes, though probably they may differ in Degrees of Power.

A great Degree of Heat is not a Quality requiſite to the Perfection of all Vegetables. *Saffron* in *France* exceeds the Produce of *Spain*, as much as the little we have in *Ireland* excells the Product of *England*.

OUR Temperate Climate ſeems in ſome Degree, to be more adapted to Vegetables of this Species of Power, than thoſe that are deemed hot. Our Bark is allowed to excel the Bark of thoſe warmer Climates, as alſo our Timber.

IT is a conteſted Point, whether the *Tormentil* is not the Plant, the *Greeks* called *Britanica*; probably ſo named from its plentiful Growth in that Iſland.

ONE great Advantage, ariſing from this Tannage ſhould it become general, will be, that it will give Imployment to a great many Poor People, that will be ſet to work in gathering, or raiſing ſuch a Quantity of thoſe Roots, as will anſwer the preſent annual Import of Bark; as alſo the Tannage of ſome, if not the Whole of thoſe Hydes, we now export unwrought; beſides the great Numbers, that will be employed in the encreaſed Tannage.

Thus, with as much Brevity, as the Nature of the Subject would admit of, I have given a Narrative, of what I hope will be as ſatisfactory, on a candid Peruſal as I am aſſured, it will be beneficial to the Publick, in all its Conſequences; if the Method laid down be but purſued with common Care, and Aſſiduity. It requiring no greater Skill than what at preſent is uſed in Bark Tannage; no Alterations in Forms, or Utenſils.

If the Inſtructions, laid down, ſhould appear to Any inſufficient, or imperfect; I ſhall always with Pleaſure be ready to render them, if in my Power otherwiſe. I have made a Plantation, very near this City, that if the Curioſity of Any ſhould prompt them to a farther Information, in that Particular, they there may meet with it. As this Tannage is conſtantly carried on; it is open to the View of Any that deſire it. I have ſeveral Thouſands of Pounds weight of theſe Roots by me; I never refuſing the buying of any brought to me.

If any Tanner wants, he may have it at the Price, I gave to the Countryman, or be directed where, or how to be ſupply'd, until a Demand makes it a Market Commodity.

OUR Neceſſities, and thoſe daily encreaſing, firſt prompted to this Eſſay. The Authority of Books, I have not relied on, but a Series of Experiments that employed ſeveral Years in the Purſuit. If I have pointed out, or cleared from Incumbrances, an advantageous Path that may leſſen the Import of Bark, extend our Tannage by our own Produce, and give a Support to any Number of Poor; I regard it in no other Senſe, than having done Part of that Duty, I owe to a Country, which in Gratitude, I would call mine.

I might juſtly incur a ſevere Cenſure, if I ſhould conclude, without teſtifying with all due Acknowledgements, a grateful Senſe of my Obligations, to the Honourable *Houſe of Commons*, for the Vote they were pleaſed to paſs in my Favour, on the Report of the *Committee*; that I had, after a full Enquiry, anſwered the Allegations of my

Petition; and for the Reſolution, they entred into, of giving all proper Encouragement to ſo uſeful a Propoſal.

FAR from being inſenſible, that all new Attempts of this Kind, are apt to ſubject the Author of them, to the Name of a Projector, and render him the Object of Reproach and Suſpicion; when I was fully ſatisfied in the Facts, on which this Method is grounded; I communicated it to ſome Perſons, who are as little liable to be impos'd on themſelves, as they are above all Suſpicion of impoſing on others; under the Sanction of whoſe Characters, ſuch an Imputation would at once be removed. By their Directions I preferred my Petition, and notwithſtanding the Succeſs was not altogether ſuch as they deſired; I hope they will not deny me the indulging a ſincere Gratitude, in particulary owning the Obligations to them, who ſo warmly eſpouſed my Intereſt, grounded upon that of the Nation. I ſhall venture to ſay no more, than as I flatter my ſelf they can clear me from any Imputations of Siniſter or Mercenary Veiws; So I can promiſe my

Endeavours ſhall always tend to hinder a Bluſh, for the Kind Repreſentations, they have been pleaſed to make in my Favour; and that I ſhall always ſtudy to approve my ſelf what is my cheifeſt Ambition to be, and what only intitles me to their Patronage; a Pretender to no other merit, but Plain dealing.

I ſhould have publiſhed this ſooner, but that I waited the Succeſs of ſome repeated, as well as new Experiments; all which on the beſt Examination I am capable of making, have tended to an intire Confirmation; That the *Tormentil* Roots Tan all Hydes and Skins as effectually, cheaper, and in leſs Time than Bark, and is eaſily propagated.

FINIS.

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